Frankly Speaking

Traffic Engineer in Civilian Defense

DURING the early part of the year a small group of traffic engineers at an informal gathering were discussing the future of their profession as it might be affected by the total war in which we are now engaged. It was too early at that time to develop a pattern and consequently difficult to forecast the future.

It was natural, therefore, that there was no unanimity of thought. Few were of the opinion that in sections of the country the curtailment in street traffic might be such that the old familiar problems of congestion and accident hazard would be lessened or might even disappear. Consequently, few were concerned about the future of their profession.

Since that time a pattern has developed, more definitely indicating a trend, and it is now or should be apparent to all traffic engineers that business as usual is out for the duration.

True, the time and degree of motor vehicle curtailment may vary in different sections of the country because of local or sectional conditions; for example, lack of adequate transport facilities for gasoline supply along the east coast. However, eventually and possibly not in the too far distant future, the reduction of private passenger car travel will be of such an amount that the traffic engineer who has given no thought to the future will no longer have a job.

To put it selfishly, in what activities can the traffic engineer become engaged to continue on the payroll?

The war emergency has brought to the front many civilian problems—problems about which there is little or no precedent—problems which can best be answered through a scientific approach designed to discover the obscure facts as well as the obvious ones.

These problems are too numerous to discuss here but generally they concern the protective phases of civilian defense as well as the important over-all problem of transportation—that of maintaining adequate civilian mobility, particularly for war workers.

The Traffic Engineer has, because of necessity, been a pioneer. He is well equipped, therefore, to perform similar pioneering in these problems and it is not alone to his selfish interest that he became so engaged but, more important, it is his patriotic duty to do so.

Well organized civilian groups supplied with the necessary facts and supported by a properly informed public are essential for the successful conclusion of the war. The traffic engineer can play an important part in this effort.

A. H. Vey

Member Board of Direction

WAR TRANSPORTATION PROGRAM

by FRED W. FISCH

IN the prosecution of the War Effort, every level of government is genuinely concerned over the potential seriousness of the Transportation Problem.

Donald Nelson, the War Production Board Chief, has stated that everything depends upon production, and transportation is a vital factor in the War Production Program.

Leon Henderson, Office of Price Administration Chief, says the rubber situation becomes more serious daily, and it is essential that the Nation's supply of tires on existing vehicles be made to last many times longer than normally.

The Office of Defense Transportation has set up an organized plan for conservation of vital transportation as a Nation-wide project. Director Eastman has asked the cooperation of the country's state governors and the mayors of our cities and towns to put across this conservation program which is among the most important phases of our War Effort.

In the State of New York, the matters relating to the emergency transportation problem are under the direction of the War Transportation Committee which consists of the State Traffic Commission augmented by additional representatives from other State agencies.

The objectives of the Nation-wide program are (1) the conservation of tires, gasoline and vehicles; (2) the prolongation of life of vehicles and tires now used to transport war workers; (3) increased efficiency of existing mass transportation; (4) provision for additional mass transportation to replace worn out private vehicles and tires; (5) improvement of traffic conditions in War industry areas; (6) reduction of accidents in War industry areas; (7) training emergency drivers.

Although the program originates at the Federal level and is being promoted through the various state War Transportation Committees, the actual operations must necessarily be carried out in the individual communities by a proper organization set up by the local administration.

According to the plans set up by New York State War Transportation Committee, New York will be divided into five or six regions with field representatives who will act as advisors to and cooperate with the local War Transportation Committees.

The functions of a local War Transportation Committee can best be illustrated by referring to the work which has been carried on in Schenectady since January, 1942, several months ahead of the initiation of similar programs by Federal or State agencies.

The growth of Schenectady War production industries during the previous year resulted in an increase of about 100% in employment and correspondingly a 100% increase in peak traffic movement.

On January 7, 1942, the Schenectady City Traffic Commission called a conference of representatives of industry, commerce, transportation, law enforcement, and the press to consider this transportation problem and to develop ways and means to alleviate the situation. A discussion of the factors which were contributing to the local traffic problems led to the suggestion that immediate consideration be given to the staggering of school, business and industrial hours, the inauguration of a program to encourage shopping in the central business district during hours which avoided conflict with the movement of War production workers and a revamping of traffic regulation

and control to expedite the movement of men, material and finished products to and from the industrial plants.

Staggered school hours were immediately put into effect, releasing the buses that were being used to transport school children, for the peak hour transportation of factory workers. A campaign for shopping between 9:00 A.M. and 3:00 P.M. was instituted by the retail merchants and the transportation company, with placards to that effect displayed in the stores and buses, and newspaper publicity stressing the importance of cooperating with the plan.

When the initial successes of the War effort of our enemies cut off some 90% of our sources of crude rubber, a new and more serious problem developed, that of conserving existing vital transportation equipment, both public and private, until such time as substitute materials could be produced in sufficient quantity to meet the national requirements.

To obtain pertinent data relative to this problem, the Bureau of Traffic and City Planning and the General Electric Company engaged in a joint study of the then existing transportation methods of General Electric employees. Questionnaires were distributed to all individuals who were commuting to work. These forms were designed to obtain information as to the use of private or public transportation, and in the case of the use of private vehicles, the extent of group riding. Information was also obtained as to each individual's place of residence and the distance from the nearest bus line, the name of the bus line and the shift hours at the plant.

Through the cooperation of the Public Service Commission, special assistants were assigned to the City of Schenectady to aid in the transportation study. From the survey data and additional information which was obtained from the transportation companies, it was possible to set up a complete schedule for the operations of all transportation lines serving Schenectady, which schedule could be instituted in whole or in part as the impact of gasoline and rubber rationing had its effect upon private transportation.

From the data obtained from the questionaires and information secured from field surveys at the General Electric Company, it was ascertained that about one-third of their employees walked to work, one-third used the public transportation facilities and one-third, private vehicles. The figures relating to the General Electric Company were increased by 40% to include the other industries in the City and to allow for contemplated increases in employment.

Considering the overall picture, it was estimated that if the individuals now using private transportation were all to be carried in buses, together with present bus patrons, the potential peak loads would require about a 100% increase in bus equipment. However, through adjustment of schedules, inclusion of express runs, skip stops, other related changes in operations and contemplated traffic improvements, it is estimated that a 10% to 15% increase in bus equipment will be sufficient to meet the problem. Additional equipment is already on order or available in the area.

This plan also contemplates the further staggering of hours at the industrial plants, offices and commercial establishments, which if put into effect, would reduce the estimated future peak loads on the mass carrier system by 40%.

The phase of the conservation program which has been outlined considers a situation in which all private vehicles might be ruled out and sets up a plan for mass transportation in which

War production workers will have exclusive use of facilities during peak hour movements.

The second phase of the local program is to be directed toward the conservation of the private vehicle. Schenectady surveys have shown that the average car being driven to the industrial plants carries an average of approximately 1.7 persons. Simple arithmetic shows that one-fourth of the cars can do the job and leads to a logical conclusion that the rotation of vehicles under a "group" or "swap" ride plan should lengthen the present life expectancy of the individual vehicle about four times.

Any voluntary change in the transportation habits of the people of the community will require an intensive promotional effort. The main objectives to be reached are (1) acceptance of the fact that the rubber problem is serious and all existing transportation units must be conserved; (2) acceptance of a "group" riding plan as a means to prolong the life of the private vehicle as part of the War effort; (3) development of the technical methods to expedite the workings of the plan.

Other activities of the local War Transportation Committee are (1) to promote the use of trucks to full capacity and to eliminate unnecessary use; (2) to eliminate wherever possible, delays to traffic by selection of routes, improved regulation of movement, improved use of traffic control devices and enforcement of traffic ordinances, (3) to by-pass through traffic over existing or proposed routes; (4) to cooperate with the local War Council in planning for emergency transportation routes.

The City of Schenectady offers the benefit of the detail experience gained in the development of its plans, to any community that is interested.

In conclusion — Transportation is Vital. Conserve it.

Digest of an article by Fred W. Fisch (Mem. I.T.E.), Director Bureau of Traffic and City Planning, Schenectady, N. Y., published in Motorgram, July 1942.

ORGANIZATION FOR A WAR TRANSPORTATION CONSERVATION PROGRAM

by MAXWELL N. HALSEY

THE transportation problem today is such that we may not be able to get our war workers nor our war materials to and from our war factories. If we should fail to service our war factories with workers and materials, then we cannot produce the instrumentalities of war.

The reason we have this war problem is because our enemies have captured over 90% of the source of our rubber supply. While there may appear to be lots of rubber on vehicles and while large figures of tires are mentioned as available and while artificial rubber is being produced, none of these are capable of providing *enough* rubber to serve the armed forces of the United Nations and have enough left to serve our factories with the transportation of workers and materials.

Four projects have been designed to protect and assume transportation of war workers; namely:

Staggering of Hours: to make it possible to carry twice as many war workers with the present street cars and buses.

Share the Ride: to make the tires of war workers' cars last at least twice as long.

Protect the War Worker: to save factory time now lost annually through traffic accidents by Selective Safety Education, Enforcement and Motor Vehicle Administration.

Better Use of the Streets: to protect war workers from being hit by oth-

ers and to increase the rate of movement of workers and materials by Selective Traffic Engineering and Regulations.

These four projects can make continuing and safe transportation serve the need of war production.

The job of conserving war transportation is the job of the communities because the problem lies within their jurisdiction. This means that the carrying out of the plan in each community must stem from its chief executive, the mayor.

While the job is a local job and must be done by local people, this does not mean that other units of government should not be of assistance in helping the city officials as well as in caring for those parts of the problem which are specifically within their jurisdiction and outside of the jurisdiction of the local communities.

The state is in a position to offer the following assistance:

Construction of access roads to war plants.

Maintenance of state roads to carry their share of the production transport.

Traffic engineering and enforcement on state roads leading to war plants.

License control of operators to prevent destruction of war workers and vehicles.

Education of drivers and pedestrians.

Provision of an Integrated War Production Program for use by communities.

Preparation of manuals, guides and instruction material.

Provision of training schools for those who must actually carry out the projects.

Creation and training of a state staff which will be on call to assist the communities.

These projects cannot be carried out without funds, and funds may be obtained by transferring moneys from existing budgets on subjects having a less close connection with the winning of the war. Other moneys may be obtained from non-governmental organizations, anxious to make their contribution to win the war.

There are certain cash items which must be met—regardless of where the funds come from. These deal largely with such items as the following: Forms, Letters, Posters, Cuts, Stickers, Charts, Photographs, Printing, Secretarial Services and Field Expense of employees.

The job is a local one and must be done by local people—who may have the advice and counsel of state personnel upon request.

The first most important step is the appointment by the mayor of an advisory committee representing industry, labor, business, transportation and schools to advise him in arranging for successful execution of the projects.

The second most important step is the appointment by the mayor with the advice of the Advisory Committee of a Local Transport Administrator. The Local Transport Administrator must administer, manage and operate the organization. Here again the acceptability of this individual to *all* of the groups is significant because satisfactory working arrangements must be possible or nothing can be accomplished. The job of Local Transport Administrator is a *full time job.* If a man cannot be loaned from city department or local organization who has the required qualifications, then the city should employ a local man specifically for this purpose.

The Local Administrator is the man who is placed in charge with *full* authority. Among his many duties are the following:

Serve as executive officer of the War Transportation Committee.

Arrange for all meetings and conferences.

Make all of the contacts and arrangements necessary to get the job done.

Supervise all plans.
Gather essential facts.
Analyze the facts and present recommendations to the committee.
Handle all publicity.
Prepare progress reports.
Address civic and public groups.

From the above it is obvious that the Local Transport Administrator should have certain qualifications. Among these are the following: He should be a good organizer, good at meeting people and securing their cooperation, able to analyze and interpret engineering data, understand public relations, must be acceptable to the groups with whom he must work and must have sufficient stature and technical ability to have the confidence of important groups.

The third most important step is the appointment by the Mayor of a Local War Transportation Committee with the assistance of the Advisory Committee and the Local Transport Administrator. The members of this committee are the persons who must arrange for the carrying out of the details of the projects.

The local "War Transportation Committee" should be composed of representatives of the basic city departments, civic organizations, the local Defense Council, representatives from Industry, Labor and the Mass Transportation company and any other cooperating agencies. Since the plan should be developed by stages, subcommittees should be formed for each part of the program.

The city engineering department is best fitted to handle the engineering aspects of the program. Such as traffic surveys, statistical analysis, and drafting and presentation.

Naturally, in all cities where there is a city traffic or planning engineer the above activities should be carried out under his direction.

The department of education can assist in staggering of hours of schools, forming clubs, share-the-ride for getting children to and from schools and promoting the whole program.

The police department and the city court can be especially helpful regarding: the protection of war workers, share the ride, critical enforcement, accident records and traffic direction for short periods at crucial intersections.

Inasmuch as the War Transportation Committee is dealing with a safety program, the local city organizations devoted to safety should help in the development of public acceptance, the adjustment of local safety programs and the making of arrangements for meetings and general organization work.

Inasmuch as many parts of the program will deeply involve business operations, it is absolutely essential that the Chamber of Commerce representing business and industry be made an integral part of the local organization. The following are the contributions which these organizations are in the best position to make: staggering of hours, share-the-ride, checking observance of the plan and business support.

The local Defense Council must obviously be an important part of the local organization because it specifically represents the war aspect of the program. Its participation lends to the program the importance of doing certain things to help win the war. The contributions which this organization can best make are as follows: encourage public acceptance, form share-the-ride plans and develop emergency traffic plans for blackouts and bombings, etc.

Since many of the stages of the program should best begin within war plants themselves, these war plants should be directly represented. An industrial representative would be of key importance regarding the following items: staggering of hours, share-the-ride, protecting war workers, facilitating traffic movements and providing parking facilities.

Labor organizations are exceedingly important in the conduct of any local program. They represent a good proportion of war workers. Their support of the program will be of great assistance in encouraging the full cooperation of each worker.

The mass transportation company is of vital importance in the transportation of war workers. Its operations are closely tied up with the following parts of the program: bus and street car schedules, staggering of hours, peak hour information, special service.

The movement of war traffic is not restricted to the boundary lines of communities and therefore the three agencies — the city, the county, the state — should be coordinated in the Local War Transportation Program.

The proposed conservation program is a voluntary one and if we fail to accomplish it on a voluntary basis, then the Federal government may find it necessary to take hard cold factual action through directions which will produce inconveniences that will make the voluntary ones appear as nothing.

To sum up the entire picture, there is a job to be done to help win the war—this job is to conserve war transportation and war workers and materials.

A digest of a paper given by Maxwell N. Halsey (Mem. I.T.E.), Executive Secretary of the Michigan State Safety Commission at Michigan State College, May 1942.

SPEED ZONING IN TEXAS

by ROBERT O. SWAIN

THE 1936 study conducted by the Highway Planning Survey revealed 42,863 danger points. Normal peacetime construction would require millions of dollars to eliminate these hazards. Wartime elimination is almost impossible except on those designated access and military highways.

The traffic control at these critical locations depends upon effective and economical remedial measures. Speed zoning affords such remedial measures.

The Texas State Legislature provided an increase of Texas' speed limit to 60 M.P.H. daytime and 55 M.P.H. at night and gave the State Highway Commission authority to lower these limits on sections of highways where "traffic and engineering" investigations show a warrant for speeds under 60-55 M.P.H. Incorporated cities have authority to increase or decrease the 30-mile municipal limit while the speed limit through unincorporated towns is constant at 30 M.P.H.

Approximately 23,000 miles of the Texas Highway System are outside the limits of incorporated cities which hold about 3,000 miles. The county road system comprises in excess of 165,000 miles. When the speed law was written no distinction was made between state highways and county roads. The Attorney General of Texas ruled on May 16, 1941, that since there was no language in the quoted provisions of the bill indicating any intent on the part of the Legislature to restrict the use of the term "highway," the State Highway Department does have authority to fix the rate of speed on county roads which connect with designated state highways at "less than the maximum."

Speed zoning consists of (1) the identification of locations or sections where there are unusual conditions or where changes are required in normal driving speeds from those at adjacent locations. This applies directly to Texas' 42,863 danger points—curves where safe speeds are less than 60 M.P.H. and approaches to municipalities where built-up roadside conditions are similar to those inside the corporate limits of the city—(2) Traffic engineering study of conditions at these locations to determine the maximum

values of safe speed for average weather and normal traffic conditions; (3) Posting those values to inform drivers of the safe speeds and as a guide in the enforcement program, (4) Enforcement of these limits to the extent possible with available police personnel. The first section of the State Highway System speed zoned was U. S. Highway 81 between Austin and Waco. Following an extensive traffic engineering study, speed signs were posted at the critical locations on this 100 miles of highway. Since the initial survey, exhaustive research studies have been conducted to determine the value of this type of traffic control. Many different types of research have been carried out.

Studies of speed zones indicate strong public obedience to signs posted around critical sections such as curves and municipal approaches; weak obedience to 30-mile signs in "rural" areas of Texas cities.

In one zone with a 45 M.P.H. limit the public travelled at 43 M.P.H. In another 45 M.P.H. zone, the speed was 48 M.P.H. which had been reduced from an approach speed of 52 M.P.H. The 50 M.P.H. zone showed a speed of 54 M.P.H. which had been reduced from 64 M.P.H. A plus or minus tolerance of 5 M.P.H. is possible since engineering calculations are based on a low coefficient of friction plus vehicles remaining in a single lane. From such a policy, it is obvious faster speeds may be obtained by "cutting corners," etc. However, engineers can not design for the "daring" type of motor vehicle operator.

Material results have also been obtained on certain sections of modern highways passing defense plants and schools. Highways in the proximity of Army posts have been zoned in a number of parts of the state. School speed zones are enforced during those periods of the school days when children are actually using the highway as a crossing. Portable signs placed in the middle of the road warn the public of speed zones at schools.

One of the most interesting studies conducted on U. S. Highway 81 was a "Public Reaction to Speed Signs" which was developed by Dr. Klein and Mr. Jerry Clark, of the Department of Psychology, University of Texas, and conducted by the Traffic and Safety Division, Texas Highway Department. The motive of this survey was to determine what percentage of the motoring public noticed speed signs and what reaction, if any, the public had to this new type of traffic control.

Questionnaires handed to the public travelling the 100-mile Austin-Waco distance revealed that 94 percent noticed the speed signs. Of the 94 percent that noticed the speed signs, 94 percent said posted speeds aided their driving. One question, "After you saw the speed sign, how did you drive?" brought the following results: 24% drove slower than the posted speed; 70% drove "about the same as the posted speed"; and 6% drove faster. Ninety percent of the interviewed motor operators considered the posted speeds "reasonable."

In the preliminary speed studies, 85 percentile speeds of 70 M.P.H. were not uncommon on the tangent sections of U. S. Highway 81. All speed observations are made by use of the Enoscope supplemented by ball and bank readings for curves. Straight line diagrams showing the following basic data aid in determining the posted speed: Accident record, traffic flow, roadside culture, roadway width, surface type and bridge width, curvature, restricted sight distance, number and location of entering roads.

An original article by Robert O. Swain (Assoc. I.T.E.), Senior Assistant Traffic Engineer, Texas Highway Department.

NEW CURB PARKING STUDY TECHNIQUES

by FRED W. HURD

THE next time you make a curb parking survey, don't walk it—ride it.

Driving on parking surveys in an automobile, instead of walking them accomplishes four times as much with very little sacrifice in the information obtained.

For instance, our crew of six men recently drove a 10-hour curb parking study over an area of 25 square blocks of downtown concentrated parking and at half-hour intervals checked each license. The same survey carried out on foot, in compliance with ordinary parking study methods, would have required 25 man days to do the job.

Blitzkreig parking studies became a necessity about three years ago when the Missouri State Highway Department extended a hand of cooperation to city officials overburdened with traffic problems. Parking studies soon headed the list. With our limited field personnel, only a small area could be patrolled on foot in the time allotted for each project. We were also dissatisfied with results obtained by an observer walking along the sidewalk, because of the attention he attracted.

First, we discarded all complicated field forms. In nearly every case an accurate pattern of time parking practices was the principal objective, and parking violations (other than overtime parking) were of minor imporance. Consequently, we ruled out all attempts to record violations such as "too far from curb," "too close to corner," etc., and were content simply to check all license numbers in the order of their occurrence at the curb.

Next, we started making the checks by automobile. At first a driver, observer, and recorder were used; however, we soon eliminated the observer, because better coordination existed when the driver made his own observations and regulated the speed accordingly. In this manner the car could be driven in high gear with the driver calling out the last three license numbers of parked vehicles in a cadence, permitting accurate recordings. Although there may seem to be some hazard involved with the driver acting as an observer, we have driven some 500 miles of parking surveys without the slightest mishap.

Double parking does not interfere with the survey, except on rare occasions when several cars are double parked in close proximity to each other. Angle parking requires slightly more time to check than parallel parking, although the progress attained by a trained crew enables the driver to remain in high gear when checking either type. Experience has shown that the average coverage per vehicle is 30-block lengths (one side) with trip frequency at half-hour intervals and 10-minute rest periods between rounds.

All of our motorized curb parking surveys have been made in towns of less than 50,000 population. Usually the parking problems of these smaller towns involve the entire business district as a unit, and nothing short of a curb parking analysis of the district as a whole will give a representative over all pattern.

For example, the summary of a "downtown" parking survey in a town of 10,000 population revealed the following distribution of one hour and less parking:

30% parked for 1 hour or less (around the city square)
19% parked for 1 hour or less (1 block from the square)
25% parked for 1 hour or less (2 blocks from the square)

26% parked for 1 hour or less (more than 2 blocks from the square)

In the absence of time parking limits, it was evident that 51 per cent of those having business requiring one hour, or less, to transact were forced to park two blocks, or more, from the city square, which contained 95 per cent of all retail business establishments. Analysis of the peak-hour survey data resulted in specific recommendations as to the member of one-hour stalls required in the immediate vicinity of the square, and the number of adjacent two-hour stalls required to meet the demand.

At another location reluctant merchants finally agreed to permit a change from angle parking to parallel parking through their business section. This permission was granted only after our parking survey of the entire related area revealed three times as many vacant stalls were available at all times on convenient side streets as would be eliminated by the change to parallel parking.

As a campaign against angle parking in the business district of a town of 2,000 populaion, all license recordings obtained during our parking survey were correlated in the office regardless of the curb location when checked. For this purpose the last four registration numbers were secured instead of the usual three, which practically eliminated erroneous duplications.

While a total of 1,286 parking changes were recorded during our 9-hour check, only 464 individual vehicles were involved. Seventeen per cent of these accounted for 45 per cent of the total parking time consumed in the entire business district.

The field sheet used for our motorized parking surveys has been made as simple as possible. One sheet is used for each side of the block and license numbers are recorded vertically in the order of their occurrence at the curb. At the head of each vertical column the time is noted at the start of each round.

The recorder leaves a blank space for each vacant stall as called out by the observer, but otherwise makes no attempt to identify a given parking stall by the horizontal line. This lining-up process is done in the office by drawing a continuous line through identical license numbers. Upon drawing each line, a tally is made on the parking summary sheet in the proper space (horizontally) according to the time of the round when the vehicle was first observed, and (vertically) according to the number of rounds the vehicle remained in the stall.

A cut-out stencil placed over the summary sheet makes it easy to add up the total number of vehicles parked each round for any given length of time.

Motorized parking surveys are solely a study of the time element in parking. They do not include observance of static parking regulations. Such information, when necessary, is collected on foot in the usual method.

An original article by Fred W. Hurd, Traffic Engineer Safety Bureau, Missouri State Highway Department.

TRAFFIC DENSITY TRENDS

The Committee on Engineering Research of the Institute of Traffic Engineers reports the following data on traffic density trends.

The Institute of Traffic Engineers through its Engineering Research Committee is cooperating with the U. S. Public Roads Administration in supplying data on city traffic. Cooperation of city traffic engineers is requested by both organizations in supplying material.

Available traffic data from automatic traffic recorders, toll facilities,

and urban sources show that drastic decreases in traffic volumes have occurred since May 15 in the gas-rationed area. Percentage increases or decreases are based on specific periods in May 1942, as compared with the same periods in 1941.

Total traffic at 98 automatic traffic recorder stations in 15 States in the gas-rationed area decreased 18 percent during the first two full weeks in May and 45 percent in the last two weeks of May, as compared with traffic a year ago. The traffic decrease at 167 stations in 23 States amounted to 13.6 percent and 16.9 percent for similar periods in the non-rationed area.

Data from 9 toll facilities in Maine, New York, New Jersey, Pennsylvania, and Florida for the last two weeks of May showed that passenger-car traffic decreased 36 percent, while commercial-vehicle traffic at these same facilities increased 9 percent. Preliminary information for the first part of June indicates, however, that the increase in commercial-vehicle traffic may not be maintained. Traffic volumes on toll bridges near large urban places decreased less than those on toll facilities in strictly rural areas.

The first week that gasoline was rationed, passenger-car traffic using the Sumner Tunnel in Boston, Massachusetts, decreased 20 percent, while the commercial-vehicle traffic decreased about 4 percent as compared with similar traffic in the like period in 1941.

Effort will be made, through the cooperation of the Institute of Traffic Engineers, to assemble what information is available regarding trends of traffic volumes in urban areas. Usable information has thus far been received from Boston and Washington.

In Boston the volume counts show that traffic was off about 13 percent previous to May 15 from similar period in 1941, and that since May 15 it has dropped another 10 percent or 11 percent, so that today traffic in Boston is 23 percent to 24 percent lower than it was a year ago.

In Washington the traffic volume from May 15 to May 31 at 11 points decreased 16 percent as compared with average traffic for May 1941.

Contributed by Wilbur S. Smith
(Mem. I.T.E.)

LOCATION, DESIGN AND OPERATION OF DISTRICT PARKING LOTS

by DWIGHT M. MCCRACKEN

THE establishment of gathering points where employees may proceed to the plant in groups by bus, rail or private car is the basic step in any transport plan. Regardless of whether bus, rail or private cars are to be used, District Parking Lots are recommended to actuate group riding by employees.

Location—The study of employee origins and routes followed to and from the plant will reveal the best locations for these lots in each district. Traffic engineers and other public authorities can assist greatly in selecting these points.

Design and Operation—The shape of the property and the entrance and exit facilities determine how the lot should be layed out for loading and parking arrangements. However, each District Lot should be designed to provide *one-way flow* in and out of the area with separate entrances and exits. Plan all automobile and bus loading operations on side streets.

For doubling-up in private cars, provide supervision to see that all cars

are fully loaded. Set a deadline based on running time from lot to plant and starting time of shift. No through car should be held at the lot even for 30 seconds beyond this deadline.

Guards stationed at company gates should understand their part in the program clearly. Here is an outline of their duties.

Company guards will check the last digit of license numbers of all cars entering company lots and will record the license number of drivers bearing wrong numbers.

Company guards will also record cars that are not filled within one seat of their total capacity.

At the close of the shift outgoing vehicles will also be checked for inadequate occupancy in the same manner.

License numbers recorded too frequently for these infractions should be traced and the employee interviewed.

Gathering Points for the Return Trip Home—To facilitate loading of vehicles on the return trip, erect a series of signs outside of the checking gate. Mark these signs plainly with district numbers or towns and cities. Drivers should stop at their district sign to pick up a capacity of waiting riders.

Important — Employee drivers who have been taking other employees to and from work regularly in their cars prior to the installation of the plan may continue to do so.

An original article by Dwight M. McCracken, Director Traffic Safety Bureau, Liberty Mutual Insurance Co., Boston, Mass.

COMMUNITY WIDE PRE-PLANNED GROUP RIDING

by LESLIE WILLIAMS

FIFTY thousand questionnaires were distributed to Providence motorists through the Transportation Committee of the Providence Civilian Defense Council at industrial plants, gasoline stations, police precincts and post offices throughout the city; and 50,000 more were placed at each gasoline rationing site on July 9, 10, and 11 by permission of O.P.A. for motorists to fill out before receiving the "A" basic gasoline ration book.

The Providence motorist was instructed to key his places of residence and employment to the number of the air raid warden districts in which he lived and worked.

The A.R.W. districts were well publicized through the Providence newspapers and large maps were printed showing outlines of the districts and their respective numbers, distributed to the industries and displayed at gasoline rationing sites at the time of registration.

Volunteer workers of the Providence Civilian Defense Council were familiarized with the districts and assigned to posts at the rationing sites to assist motorists in keying residence and place of employment to A.R.W. districts.

Since Providence is 18 square miles and the 36 fire districts corresponded to the A.R.W. districts, these were selected as being sufficient in number and size to form practical origin and destination zones; and since time of leaving home for work and time of leaving work for home was requested, the study was termed an O. & D.-Time Planning Survey of Automobile Group Riding.

It is too early to draw conclusions regarding the effectiveness of forming car pools with four motorists alter-

nating cars. The questionnaires show a number of motorists willing to join and form car pools, but the matching of origin, destination and time factors may prove to be disappointing to a number.

If this proves to be true, then some broader plan will probably be tried which will group motorists and non-motorists, especially in areas not adequately served with public transportation.

The plan as set up in Providence could be expanded to include non-motorists, but it would require much clerical assistance and coordination between public transportation officials, local gasoline rationing boards and local governmental officials including the local War Transport Administrator.

All Providence motorists with the *exception* of those stating they do not use their cars to drive to work and those who now drive alone and cannot join a regular riding club because they have no fixed place of work, irregular traveling, unusual hours, etc., were first sorted into the fire or A.R.W. districts in which they live. Then all the motorists living in any one single district are re-sorted into the several A.R.W. districts and outlying towns in which they work and finally questionnaires are arranged in each employment district according to time of leaving for work.

Cars driving to work with four persons a car, or full and listing the names of the riders on the back of the questionnaire will be placed in an inactive file which will show the number of clubs with four or more riders.

All the remaining questionnaires in each employment district and belonging in a single residential A.R.W. district will be bundled and filed in numerical order of employment and alphabetical order of outlying work towns and finally placed back in its respective residential district.

Any Providence motorist wishing to join or form a car pool of motorists can then either telephone or write to, or call in person at Group Riding Headquarters, giving his name, registration, place of residence and employment and time of leaving for work; and he will receive the names of other motorists who are now riding alone and can join a club and those who are now driving persons to and from work but have some vacant seats and can fit into the inquiring motorist's schedule.

There are approximately 57,000 registered passenger cars in Providence. The final count as to the total motorists registering in the city has not been received by O.P.A.; but most of the questions have been tabulated on approximately 35,000 questionnaires.

The results are as follows:

Do you DRIVE to work?

No	8,093
Alone	15,131
With passengers	11,551
1 In regular clubs	4,982
2 Can join	1,053
3 Cannot join	5,516

Load factors for passenger carrying cars	3.1
1 In regular clubs	3.4
2 Not in regular clubs	2.7
Can join	2.6
Cannot join	2.8

A casual glance through those questionnaires stating that the car owner is in a regular riding group seems to show that not many car pools are in operation with four motorists alternating cars. What matching of motorists will reveal is unknown at present.

It is safe to state that a number of motorists indicated they already belong to a regular riding group because they did not understand the meaning implied in "regular" group; i.e., motorists alternating cars to save on rubber and gasoline. Some others who said they were in regular groups believe that if they secure three persons to ride with them regularly to work, they will receive supplemental gasoline. This matter raises many questions beyond the scope of this article.

If motorists can obtain extra gasoline by forming riding groups without having to establish *first* that the motorist or his passengers cannot get to work by other means, it is very possible that not only conservation of rubber and gasoline will receive a setback, but also the safety program seeking to conserve manpower, man-hours and machines by keeping traffic accidents to a minimum will be adversely affected.

Motorists are apt to regard supplemental gasoline as for occupational use only and the basic four gallons for pleasure riding. Mr. Donald Nelson of the War Production Board has been quoted as saying that pleasure driving is out for the duration.

Be this as it may, the Providence tabulations, although not complete, throw some light on the life of tires in terms of months, distance from home to trolley and distance from home to work, and the three types of motorists — those carrying passengers, those riding alone, and those not using cars to drive to work.

The figures listed below are for cars *now carrying passengers to and from work*:

Distance from home to work

5%—one mile or less (walk)

48%—over one mile to 5 miles (bus and trolley)

20%—over 5 miles to 10 miles (bus and auto)

27%—over 10 miles (special buses and autos)

Distance from home to trolley and bus

46.5%—⅛ mile or 3 minute walk

28.1%—⅛-¼ mile or 5 minute walk

12.4%—¼-½ mile or 8 minute walk

13.1%—over ½ mile or 10 minute walk

Life of tires in months

24.0%—6 months or less

48.5%—7 months to 1 year

13.3%—13 to 18 months

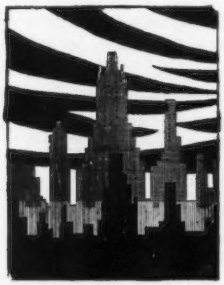
10.0%—19 months to 2 years

4.2%—over 2 years

These figures for passenger carrying cars show that 24% of the motorists and their passengers will be on the rims by Christmas; therefore it seems logical to conclude that every effort should be made to put into effect a staggered hours plan once it is completed, and that war industries should be urged to form walking teams, car-pools and group riding clubs for motorists and non-motorists within their plants.

The figures presented here are not conclusive, but are offered as an aid to technicians working in War Transport.

An original article by Leslie Williams (Assoc. I.T.E.), War Transport Administrator for Providence; Civic Planning and Traffic Board, Providence Chamber of Commerce, Providence, R. I.



Stop, Look and Listen

NOMINATION OF OFFICERS AND DIRECTORS

In accordance with Section II, Article 5 of the I.T.E. By-Laws, the Nominating Committee, duly appointed by the President, has presented its report containing the following nominations for Officers and Members of the Board of Direction to be selected at the annual meeting to be held in October.

President ..... D. Grant Mickle
For one year

Vice-President .. Harold F. Hammond
For one year

Secretary-Treasurer .. W. Graham Cole
For one year

Director ..... Harry H. Harrison
For two years

Director ..... Wilbur S. Smith
For two years

PERSONALS

Lieut. F. M. Kreml (Affil. I.T.E.), director of the Northwestern University Traffic Institute and the Safety Division of the International Association of Chiefs of Police, has been commissioned in the United States Army and ordered to active duty with the Office of Transportation, Service of Supply.

The request for Lieut. Kreml's services was made by the army. His duties will involve responsibilities for highway transportation of troops and supplies.

Lieut. Kreml has been granted a leave of absence from his post at Northwestern University. R. E. Raleigh, director of field service for the Safety Division of the I.A.C.P., will serve as director of the two police organizations in Lieut Kreml's absence.

It will not be Lieut. Kreml's first contact with the army. In February of last year a study of the war department's military traffic control, doctrine and technique was made. The study culminated in a 144-page report analyzing military traffic problems and setting forth recommendations dealing with control procedures.

During the past year Lieut. Kreml has been engaged in instructing commissioned military police officers in traffic accident investigation and traffic law enforcement at the Provost Marshal General's School. He is also a member of the advisory committee for the nation-wide conservation program now being activated by the U. S. Office of Defense Transportation and the National Highway Advisory Committee to the War Department.

Fred J. Myers (Jun. I.T.E.), formerly with the Oregon State Highway Department, is now affiliated with the research group of the Motor Vehicle Rationing Section, Office of Price Administration in Alexandria, Virginia, and is engaged in various plant studies and field studies of motor vehicle use.

Mr. Robert F. Royster (Jun. I.T.E.), Assistant Accident Prevention Engineer, American Transit Association, is now a First Lieutenant in the Engineer Corps, assigned to the Traffic Control Section of the Engineer Board at Fort Belvoir, Virginia. Mr. Royster's home address is Apartment D-2, Grover Cleveland Building, Presidential Gardens, Alexandria, Virginia.

APPLICATION FOR MEMBERSHIP

Russell Eugene Harrison
City Traffic Engineer, Police Department, Kalamazoo, Michigan

Thomas Paxton Walbert
Traffic Engineer, Planning & Traffic Division, State Highway Department, Lansing, Michigan

DEFENSE DRIVERS' TRAINING INSTITUTE

One hundred and nine men and women from 63 communities in the states of New York, New Jersey and Delaware attended the first training institute for instructors of civilian defense drivers corps, which was held in New York City during the last week in April under the sponsorship of the Second Civilian Defense Region of the U. S. Office of Civilian Defense. Conducted with the cooperation of the Bureau of Training of the New York City Civil Service Commission and the New York University Center for Safety Education, the institute provided those in attendance with intensive practical training in the selection, organization and training of civilian defense drivers corps.

BUFFALO SHARE-THE-RIDE

The city of Buffalo has been divided into 84 share-the-ride districts. Results so far show that 500 fewer automobiles are being used to transport Bell Aircraft employees to and from work, causing a saving of 22,470 car miles a week. On an annual basis this saving amounts to $25,000—Vital to Victory.

LOOKING AHEAD

July 20-22, 1942—Annual Meeting, American Association of Motor Vehicle Administrators, Milwaukee, Wisconsin.

October 5-9, 1942—Thirty-first National Safety Congress and Exposition, Chicago, Illinois.

ANNOUNCEMENTS

The American Transit Association has just initiated a wartime safety award in which all transit companies serving cities of 30,000 population and over are eligible. This award, known as "The American Transit Safety Award" will be a silver medallion mounted on a walnut base. The medallion is of new, outstanding design, being created for the Association by M. Grigor, nationally known in the field of sculpture.

A.T.A. NEWS SUGGESTIONS

The American Transit Association recommends the following subject matter for news stories.

Illustrated stories of reconditioning of equipment.

Present increases in riding: future increases in riding.

Increased facilities to take care of added riders.

Special activities in which the company is participating such as Red Cross, local defense councils, first aid training, and establishment of Motor Reserve Battalions.

Publicity on any bulletins issued by companies on what they propose to do to take care of the public in case of air raids and blackouts.

Orders, deliveries and delays of new equipment.

Government recognition of the essentiality of the industry.

How local transit company is serving defense plants.

Stories on individual employees joining the armed forces.

Any move by company and civil authorities in the direction of staggered working hours.

AUTOMATIC SIGNAL CORPORATION

ELECTRO-MATIC
TRAFF-O-MATIC
TOKHEIM

FULL AND SEMI TRAFFIC-ACTUATED SIGNAL SYSTEMS. FIXED TIME CONTROLLERS AND SIGNALS. SPEED CONTROL SYSTEMS. VEHICLE COUNTERS. TOLL REGISTERS. RELAYS

"Traffic Regulation with Intelligence"

Norwalk, Conn. Chicago, Ill.

When writing advertisers, please mention TRAFFIC ENGINEERING

METHODS OF OPERATING TRAFFIC CONTROL SIGNALS DURING BLACKOUTS

The Committee on Standards and Specifications, William C. Brandes, (Mem. I.T.E.), Chairman, reported to the Institute of Traffic Engineers' members in June the following report. It is apparent from reports submitted from various parts of the country that normal traffic signal indications cannot be permitted during blackout emergencies. This decision is largely motivated by the Army requirements and the official ruling of the Office of Civilian Defense stated in its pamphlet on Blackouts.

It is further apparent that any consideration in the treatment of traffic control signals must be based on two conditions of blackout, as follows:

Test and Infrequent Blackouts
(with vehicle traffic stopped)

Frequent or Nightly Blackouts
(with normal traffic movement)

Test and Infrequent Blackouts: Blackouts of this character generally result in the prohibition of movement of all vehicular traffic except emergency vehicles, such as fire and police apparatus, ambulances and public works or utility repair vehicles. It is generally conceded that during such blackout emergencies substantially all traffic signals are to be turned out completely. Infrequency of the emergency does not justify the use of critical materials or the expenditure of funds for any special treatment, including automatic or remote shutdown of signals, as by photo-electric equipment, etc. Such emergency vehicles as are using the streets at this time on vital errands cannot be expected to delay their movements by observance of red signals. Being relatively few in number such emergency vehicles will probably, in negotiating intersections, rely on audible warnings to cross traffic of like nature which may be present.

Various methods of darkening signals are in use or contemplated, of which the following are acceptable:

Interconnected signal systems. Interconnected controllers in a traffic signal system usually permits the turning off of all signal lights from a central point.

Isolated intersections or non-interconnected signal systems. These are turned off locally by Civilian Defense personnel such as Air Raid Wardens, etc. or by other specially designated persons. By key switches mounted in or external to the controller cabinet or by opening controller cabinet and operating signal light switch. This method obviously is not desirable unless regular maintenance forces perform the switching service.

Frequent or Regular Blackouts. When blackouts are of frequent occurrence, vehicles other than the emergency services will of necessity be allowed to travel. As a minimum, vehicular traffic essential to the war effort and mass transportation units, equipped with approved blackout lighting, as well as pedestrians, probably will be allowed the free use of streets. Consequently traffic signal operation although it may be conditionally limited becomes a necessary safety function. However, the signal indication obviously must meet Army requirements as to visibility from the air.

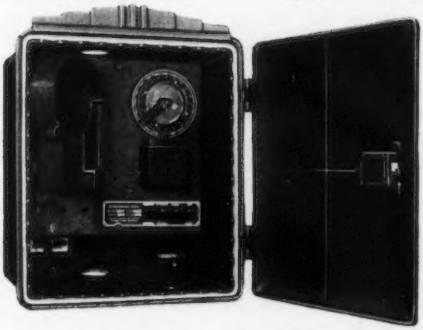
Following are several acceptable methods of reducing amount of light output from signal lenses:

Voltage Control by Using Transformers. By inserting a transformer in the lamp circuit, thus not affecting the controller motor, which may be cut into or out of circuit as blackout or normal conditions require. Lamp voltage will vary with size of lamp, type and condition, of optical unit and other factors. Final voltage to be applied is determined by aerial detectibility and has been found to be ap-

CROUSE-HINDS ANNOUNCES

THE NEW TYPE K CONTROLLERS

Type KS-1 Synchronous Type KA-1 Induction



Type KS-1 Synchronous Controller
For Non-Interconnected Operation

Circuits and Intervals—Six circuits with four to sixteen intervals per circuit.

Adjustable Cams—Removable lobes on color-coded cams permit changes in interval sequences without purchasing new parts.

Motor—High torque, slow speed, low power input, high efficiency.

Lubrication—Precision ball-bearings and slow speed obviate lubrication troubles.

Unit Construction—Makes servicing easy.

Jack Mounting—Makes removal easy—timer swings out of cabinet for inspection.

Flasher—Flasher and radio interference filter optional. Separate terminal transfer block permits all-amber or amber-red flashing.

Manual Switch—Manual switch optional—cord type with rubber grip.

Cabinet—Weatherproof cabinet with removable conduit hub plates top and bottom.

Type KS-1—Driven by synchronous motor, range 30 to 120 seconds, equipped with offset dial and hand-operated reset switch.

Type KA-1—Driven by variable-speed induction motor, range 40 to 120 seconds.

Crouse-Hinds Company

SYRACUSE, NEW YORK, U.S.A.

proximately 30 volts for 60 watt 115 volt lamps with full lens illumination. The transformer method provides flexibility in handling unusual conditions of signal circuits although it involves the use of some critical material. Several methods of cutting the voltage transformer into and out of circuits are as follows:

Manual switching by use of key switches operated by Aid Raid Wardens or other persons
Astronomical time switches
Photo-electric cell switching devices
By remote control in an interconnected system if sufficient conductors are available

Voltage Reduction by Fixed Resistor Method. Among the usual forms of resistors which might be inserted in the lamp circuit the most practical now appears to be the incandescent lamp. Recent experiments have proved that, for example, the insertion of a 150 watt, 115 volt lamp in series with the common return wire of a four lamp signal circuit of 60 watt lamps will reduce the impressed voltage on the signal lamps to approximately 30 volts. As stated in "A" above this is the desired potential for blackout operation with full lens. Variations from the above in signal lamp wattage, voltage and number of lamps in the circuit will call for compensating variations in the resistor lamp ratings to approximate the same signal lamp voltage. Further information in this regard will soon be available. The lamp-resistor method of voltage reduction may prove to be the most practical yet devised. Means of inserting the resistor lamp in the circuit during emergencies might be accomplished in the same manner as a transformer, set forth above.

Masking of Signal Lenses. A light weight metal mask applied to the outside of signal lens may be used under certain conditions. It has the added advantage of protecting the glass against breakage from bombing effects. The mask aperture in the form of a 3 inch cross recommended in the OCD Blackout Pamphlet has not been generally accepted as satisfactory. Its daytime visibility is considered insufficient while the probability of its night-time light emission meeting Army requirements for blackout is seriously questioned.

The size and shape of aperture together with lamp size must be based on maximum light requirements to be specified by responsible Army authorities. If, when this condition is met, the indication is insufficient for safe daytime vehicle operation, the masking method must be considered as unacceptable.

Conclusion. Any method of traffic signal treatment for blackout emergencies must be based mainly on the probable frequency of blackouts. Frequency of emergencies is largely conjectural and will vary greatly by localities. The Traffic Engineer and other authorities must weigh carefully the probabilities of regular blackouts against the need for signals and the use of critical materials in providing satisfactory operation of the equipment.

DO YOU KNOW

Since the Pontiac, Mich., experiment, ride-pooling plans have been placed in operation in many large cities — including Dallas, Detroit, Chicago, Houston, Seattle and Providence —and in innumerable small ones.

In the latest developments in auto-sharing programs, farmers in Michigan have been asked to form truck pools to conserve equipment and tires, while taxicab companies in Seattle have been requested to inaugurate "share-the-fare" service in the more heavily congested areas of the city.

In Pontiac a survey made after the ride pooling plan had been in operation a month showed the average num-

ber of passengers in cars driving to and from defense plants increased from 1.3 to 1.9 per car, traffic accidents dropped sharply and there was a 10 per cent decrease in traffic flow along Pontiac's main traffic arteries.

In developing a master plan for ride-sharing in Detroit, about 100 of the city's largest war production plants have been asked to supply information to the city transportation coordinator on location of workers' homes, shifts they work and type of transportation they use.

A Detroit newspaper, the News, is cooperating in the development of group-riding clubs by carrying a column daily of information from motorists willing to participate in ride-sharing groups.

Dallas' share-a-ride program was started after a survey of local defense plants showed 95 per cent of the employees rode to work in automobiles.

In Houston, 25,000 car-owners were asked to pledge to conserve rubber by forming ride-sharing groups of five each, with each group member driving his automobile to and from work every fifth week.

The Chicago Daily News prints information blanks in the newspaper daily, to be filled out and returned to the "Auto Pool" editor by readers interested in participating in a ride-sharing club.

Protection is afforded motorists in 27 states which have "guest suit" laws under which a driver's liability for injuries to non-paying passengers is limited to certain conditions of negligence or willful carelessness. No such protection is afforded in the remaining 21 states. The simplest method of avoiding legal complications, according to the Association, is an exchange of waivers among participants in group-riding clubs giving each driver immunity from legal action by other participants in event of an accident.

Oregon won first place among all states in the Third National Pedestrian Protection Contest, sponsored by the American Automobile Association.

The National Grange and the Highway Education Board have announced the 14th Annual Highway Essay Contest under the subject "Grange Cooperation in War-Time Transportation." Juvenile and Subordinate Grange members who are not more than 18 years of age on September 1, 1942, are eligible. Essays will be confined to not more than 800 words.

It has been established that approximately 65 per cent of all motor vehicle travel in the United States is for such purposes as business, earning a living, or maintaining the home.

Blackout and air-raid traffic rules have been issued in the Second Civilian Defense Region, comprising the State of New York, New Jersey and Delaware. The regulations require halting of normal traffic during blackouts and provide special treatment of lights on emergency vehicles.

Converted "haulaways," the type of motor vehicle recently used in the transportation of automobiles over the highways, are being considered as a solution to the movement of workers to and from the Glenn Martin airplane plant near Baltimore, Maryland. The State war-time transportation committee is reported to be planning an experiment of converting the "haulaways" into buses.

Modern salesmen are almost completely dependent on the passenger automobile. 507,520 out of 800,000 salesmen contacted travel more than

300 miles per week; 328,800 travel in more than 25 cities; 290,800 travel outside their state of residence; 263,840 cover territory where cities are 75 miles apart; only 183,680 say they can use train or bus to cover their territory.

Approximately one out of every five cities in the United States over 10,000 population now owns or operates municipal parking lots, mainly to clear business streets for traffic.

Automobile manufacturers expect a lag of six months after the war before production of new automobiles and a tremendous demand.

"LIGHT-UPS" FOR WAR PRODUCTION

Except at times when there is an actual air raid, the reduction of street lighting for dim-outs or blackouts is defeating our primary job of producing war goods, according to Governor Charles Edison of New Jersey. Writing for *New Jersey Municipalities*, he quotes the recent specifications of the United States Army Engineers Board on the necessity for keeping present street lighting in use, and possibly improving it in certain localities:

"Normal street lighting will prevail except when blackouts are ordered by proper military authorities. Any curtailment of present street illumination at other times is not recommended. Reduction in lamp current, size or number of street lamps simply results in added traffic hazard without any significant decrease in case of detection and identification from the air."

Governor Edison cautions communities, hastily preparing for possible air raids with elaborate plans for blacking out, to get official approval first. "Blackout lighting should be supplementary lighting, used only when ordered by proper authority," he says. He mentions the attempt of one agency to dim protective lighting around manufacturing plants with blue shields. The result, according to Edison, was that the light gave no protection to the plants and was of little value as blackout equipment.

Preventable night accidents are consuming 206,000,000 man hours a year, Edison states. Translated into terms of the products of our war factories and shipyards, this means six battleships, 6,000 heavy bombers or 25,000 trainer planes.

Poorly lighted roads leading to our defense plants are a major cause for this loss in manpower. "Blackouts for hiding and light-ups for safety" is the slogan he suggested for the sensible application of thoroughfare lighting during the war.

STATE'S PART IN SAFETY PROGRAM

In the AAMVA Bulletin for June, 1942, Earl Snell, Secretary of State of Oregon, stated, in brief, the following:

Any state traffic safety campaign costs money. It also requires time, effort, skill and science. But the cost of a campaign is small when we compare it to the cost of traffic accidents. If we are to reduce the cost of traffic accidents we must have the tools with which this can be accomplished.

Safety problems have been created by faulty legislation and an overwhelming toll of life and property has been taken before the need for sound leadership and remedial laws was recognized. However, legislators who are given an opportunity to review a sound, practical plan, and who are shown definitely and specifically what has been and what can be accomplished, usually manifest a genuine interest and desire to cooperate in making such a program effective.

To shape a program of safety for public consumption, we must use newspapers, the radio, motion pictures, public meetings, schools and organizations.

ELECTRIC SIGNALS

Standard signals adapted for all types of mounting. Synchronous and induction control mechanisms and accessory devices.

REFLECTOR SIGNALS

When signs are not enough or expense is a factor, reflector signals keep down both cost and accident rate.

8"; Six 1⅝" Stimsonites

15"; Six 3" Stimsonites

REFLECTOR SIGNS

Large Stimsonized and standard reflector button signs for all traffic conditions.

72" SIGN
18" LETTERS

24" SIGN
6" LETTERS

DELINEATORS

Reflector Delineation gives essential road information after dark at daylight distances. The alignment and driving limits of the road are outlined by a channel of light.

SIGNAL CORPORATION SS SIGNALS SERVICE ELIZABETH, N. J.

ON THE SHELF

A Manual on the Conservation of Vital War Transportation and Vital War Man-Power: Part I—Staggering of Hours; Part II — Share the Ride; Part III—Conservation of Man Power Through Enforcement; Part IV—Better Use of Streets Through Selective Traffic Engineering, prepared by the Michigan State Safety Commission, Lansing, Mich., June, 1942. Free to traffic engineers when part of the local transportation committee.

Conservation of Vital War Transportation: Published by the Office of Defense Division of Local Transport, Washington, D. C. An Outline of Procedure and Methods for the conservation of existing public and private transportation facilities.

Voluntary Car and Tire Conservation Moves Ahead: Pyke Johnson, Automotive Safety Foundation, June, 1942. A resume of activities by national organizations encouraging conservation of civilian motor vehicles.

Proposed Integrated War Program of the Michigan State Safety Commission: Maxwell Halsey, Michigan State Safety Commission, April, 1942. An analytical approach to the problem of conservation of war workers and the vehicles which carry war workers and war materials.

"Some Characteristics of Motor-Vehicle Travel" by Robert H. Paddock; *Public Roads*, Federal Works Agency Public Roads Administration, April, 1942. A timely study showing the purposes for which motor-vehicle travel is used, an estimate of total vehicle-miles traveled during 1940, and the relationship between the age of the car and the character of its use.

"Urban Land Use and the New Mobility" by Katherine Perring and Melville C. Branch, Jr., Bureau of Urban Research, Princeton University: *The American City*, May, 1942. A glance into the future, anticipating the everyday use of the airplane and the changes in city planning which this will necessitate.

"Handling War Traffic," an article by four experienced traffic engineers, *American City*, May, 1942. Four men report on the way they have handled the war traffic problem in their respective localities.

"Hill-Climbing Ability of Motor Trucks" by Carl C. Saal; *Public Roads*, May, 1942. A report on the study made of the performance of new motor trucks in the best of condition, performance of used trucks, and driver behavior of motor trucks and passenger cars in every day traffic.

Employee Transport Plan for War Industries prepared by Traffic and Safety Bureau of the Liberty Mutual Insurance Co., Boston, Mass. A digest of this 19 page well illustrated practical pamphlet was printed in the June issue of Traffic Engineering.

A Plan for Staggered Hours in Atlanta by Traffic Safety Committee, Atlanta Chamber of Commerce, June, 1942, 24 pages. A straightforward plan explaining procedure illustrated with many graphs and charts.

Bridgeport Transportation Survey by Hawley S. Simpson, American Transit Association, N. Y. C., March, 1942. This report outlines causes leading to the present critical transportation situation, the future outlook and the application of measures to provide relief.

Blackout of Street Lighting by George A. Eddy, Engineering News-Record, May 7, 1942. Systems of control and essential elements are well explained.